



# The Impact of Emergency Department Use on the Health Care System in Maryland

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# The Future of Emergency Care in the United States Health System

Institute of Medicine  
June 2006



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# The Future of Emergency Care

## Key Findings

(Institute of Medicine 2006)

- ED overcrowding is a universal problem (Academic & Community Hospitals)
- Emergency care is highly fragmented
- Critical specialist unavailable
- Ill - prepared to handle a major disaster
- Not well equipped to handle pediatric care



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# The Future of Emergency Care

## Key Findings

(Institute of Medicine 2006)

- Inadequate inpatient bed availability
- Discernible risk when average bed occupancy rates exceed 85% (BMJ,1999)
  - Boarding patients in the ED
    - Limited privacy, receive less timely services, do not benefit from expertise and equipment specific to their condition that they would receive as an inpatient



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# The Future of Emergency Care Recommendations

(Institute of Medicine 2006)

- Create a coordinated, regionalized, accountable system
- Create a lead agency
- End ED boarding and diversion
- Increase funding for emergency care
- Enhance emergency care research
- Promote EMS workforce standards
- Enhance pediatric presence throughout emergency care



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# End ED Boarding and Diversion

Address ED Overcrowding



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# ED Overcrowding

- **No single universal definition**
- **Consensus exists that when the demand for ED services exceeds the ability to provide service, overcrowding exists (Weiss et al, 2004)**





# ED Overcrowding

- **State/National/International problem**
- **System Problem**
- **Complex**
- **Multi-factorial**
- **Complex web of interrelated issues**







# ED Overcrowding

Impact on Health Care  
Strategies for Improvement  
Research Opportunities



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# ED Overcrowding Impact on Health Care

Patient Safety

Quality of Care



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# Patient Safety and Quality of Care

(Hoot et al., Annals of Emergency Medicine, 2007)

- Deficit in quality of emergency care
- Reduced access to emergency medical services
- Delays in care for cardiac patients
- Delays in care for all patients
- Increased mortality



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# Patient Safety and Quality of Care

(Hoot et al., 2007)

- Inadequate pain management
- Extended patient transport time
- Risk of violence: angry patients against staff
- Increased costs of care



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# Patient Safety and Quality of Care

(Hoot et al., 2007)

- Decreased patient satisfaction
- Increased risk management issues
- Decreased physician and nurse job satisfaction



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# Strategies for Improvement

- Input: Demand for ED services
- Throughput: Changes in the management of patient care within the ED
- Output: Hospital and community health system capacity and response.





# Throughput

## Systematic Process Analysis

### Failure Modes Effects Analysis (FMEA)

FMEA analysis is a tool which helps analyze the steps in a process for failures, causes of failures, and their criticality. Based on the criticality analysis, improvements are made to prevent or mitigate the effects of the process failures.



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# Sample FMEA

Process Function	Potential Failure Mode	Potential Effects of Failure	Potential Cause(s) Mechanism(s) of Failure	S E V	O C C	D E T	R P N
Patient arrives in extremis	Staff not at greet desk	Patient death	High patient census	10	1	2	20
	No bed available	Delay in care	Increased patient acuity	9	3	1	27
		Potential harm to other patients Possible communication failure with handoff Treatment delay/omission	Decreased staffing levels Disaster				





# Sample FMEA

Recommended Action(s)	Responsibility and Completion Date	Actions Taken	S E V	O C C	D E T	R P N
						0
						0
						0
						0
						0
						0





# Throughput

Improving hospital efficiency and  
patient flow

## Queuing theory

Smoothing the peaks and valleys of patient admissions has the potential to eliminate bottlenecks, reduce crowding, improve patient care and improve costs. (IOM, 2006)



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# Throughput Process Change

- Accelerated rapid screening and assessment
- Accelerated initial provider assessment
- Team assignments for waiting room patients
- Rapid diagnostics & consultative services
- Capacity bed management plans and meetings
- Bed Czars and coordinators
- Waiting Room Medicine
- Placement of patients in inpatient hallways





# Leadership Responsibilities

(Joint Commission, 2007)

## Standard LD 3.15

The leaders develop and implement plans to identify and mitigate impediments to efficient patient flow throughout the hospital.



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# Research Opportunities

(IOM, 2006)

- Address the needs and gaps in emergency care
- Explore innovative strategies to meet ED and inpatient occupancy demand
- Examine hospital efficiency and patient flow
- Review the appropriateness of medical treatments
- Examine ED utilization patterns and trends



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# Improving the Delivery of Emergency Services

## Achieving the Vision

(IOM, 2006)



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# Improving the Delivery of Emergency Services

- Address the needs of general and specialty populations (psychiatric patients)
- Identify and recognize “Best Practices”
- Address the convenience of “one stop shopping”



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# Improving the Professional Practice Environment



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# Center For Excellence In Emergency Nursing

International ED  
Nurse Exchange Programs

Special  
Operations

Global  
Health

Critical Event  
Management

Leadership  
Program



Research  
Fellowship

Transportation  
Medicine

ED Community  
Health and Outreach  
Programs



# Improving the Delivery of Emergency Services

There is no “one size fits all solution”

(IOM Report Brief, 2006)

Focusing on a single issue to improve  
operations is a fool’s errand (Kelen, 2006)



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